



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,254	09/17/2001	Gene E. Lightner		1186

7590 08/06/2003
Gene E. Lightner
706 S.W. 296th St.
Federal Way, WA 98023

EXAMINER

HAILEY, PATRICIA L

ART UNIT	PAPER NUMBER
----------	--------------

1755

5

DATE MAILED: 08/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/955,254

Applicant(s)

LIGHTNER, GENE E.

Examiner

Patricia L. Hailey

Art Unit

1755

-- The MAILING DATE of this communication appears in the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 1755

Applicant's remarks and amendments, filed on May 12, 2003, have been carefully considered.

Claim 16 has been canceled; no new claims have been added.

Claims 1-15 and 17-19 remain pending in this application.

The objection to the Specification stated in the previous Office Action has been withdrawn in view of Applicant's completion of Example 2.

The 112(2) rejections stated in the previous Office Action has been withdrawn in view of Applicant's amendments to claims 4, 5, 10, 12, and 17, and in view of the cancellation of claim 16.

Applicant's assumption that, upon the cancellation of claim 16, original "claim 17 becomes claim 16" is incorrect. The cancellation of a claim does not necessitate the immediate renumbering of subsequent claims.

The following rejections of record have been maintained:

Claim Rejections - 35 USC § 102

1. Claims 1-12, 15, and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Clausen et al. (U. S. Patent No. 5,188,673), Applicants' submitted art.

Clausen et al. teach a method of converting lignocellulosic materials to sugars. The method involves mixing the lignocellulosic material with sulfuric acid (acid concentration of 30 percent or greater), allowing the reaction to proceed at 100°C or less (considered to be a hydrolysis process), and separating the sulfuric acid and sugars (consisting of glucose and xylose) from the reaction product. See col. 2, line 42 to col. 3, line 18 of Clausen et al., as well as col. 4, line 31 to col. 5, line 61.

The sulfuric acid and sugars may be subjected to acid recovery or neutralization to isolate the sulfuric acid and the sugars; the sugars may be subjected to fermentation to chemicals or energy forms such as alcohols, methane, etc., and the acid may be recovered for reuse. See col. 5, lines 5-24 of Clausen et al., which also discloses the process steps of recycling a portion of the acid-sugar solution into the hydrolysis reactor to maximize the concentration of sugars in the sugar-acid solution.

In view of the above teachings, Clausen et al. anticipate claims 1-12, 15, and 17-19.

Claim Rejections - 35 USC § 103

2. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clausen et al. (U. S. Patent No. 5,188,673), Applicant's submitted art, in view of Brink (U. S. Patent No. 5,366,558).

Clausen et al. is relied upon for the teachings discussed in the above 102(b) rejection. Clausen et al. do not teach or suggest the limitations of claims 13 and 14.

Clausen et al. teach the process steps of neutralizing sulfuric acid and sugars, as stated in the above 102(b) rejection. See also col. 5, lines 8-11 of Clausen et al.

Brink is relied upon to teach the conventionality in neutralizing hydrolysate produced via hydrolysis of lignocellulosic material, which can be performed with calcium hydroxide (a "base") and ammonia (which is added to promote fermentation). See col. 6, lines 21-30 of Brink.

In view of the teachings of Brink, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have performed the post-hydrolysis neutralization steps disclosed in Clausen et al. with components such as calcium hydroxide and ammonia. "The use of conventional materials to perform their known functions in a conventional process is obvious." In re Raner, 134 U.S.P.Q. 343 (CCPA 1962).

Further, because both references are directed to processes of hydrolyzing lignocellulosic materials, motivation to combine the teachings of these references is deemed proper.

Response to Arguments

In response to Applicant's arguments that Clausen et al. is "irrelevant to claim 1 within the present invention, and are without application" to the instant claims, it is the Examiner's position that Clausen et al. do form "a sugar phase and an aqueous acidic solution phase", and that the sugars and the

Art Unit: 1755

sulfuric acid are separated for either reuse (sulfuric acid) or for fermentation to chemicals or energy forms (sugars). See col. 5, lines 5-24 of Clausen et al.

Applicant argues that "sugars are incompletely removed from the resulting hydrolysate and form a hydrolysate, containing sugars, for recycle for subsequent hydrolysis." It cannot be determined whether Applicant makes this statement in reference to the claimed invention or to Clausen et al.

Brink is relied upon to provide the conventional step of neutralizing a hydrolysate produced by hydrolyzing a lignocellulosic material, which can be performed with calcium hydroxide and ammonia.

The teachings of Clausen et al. are considered to continue to anticipate claims 1-12, 15, and 17-19, and the teachings of Brink combined with those of Clausen et al. are considered to continue to read upon claims 13 and 14, because Applicant has not presented any convincing arguments distinguishing the claimed invention from these references.

For these reasons, Applicant's arguments are not persuasive.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing


Art Unit: 1755


date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (703) 308-3317. The examiner can normally be reached on Mondays-Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Bell can be reached on (703) 308-3823. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0661.


Lynn Hailey/plh
Examiner, Art Unit 1755
July 29, 2003


Mark L. Bell
Supervisory Patent Examiner
Technology Center 1700